REMARKS/ARGUMENTS

1. Claims 1, 2, 10, 11, 13-15, 18, 20, 21, 23, 24, 32, 33, and 35 are Patentable Over the Cited Art

The Examiner rejected claims 1, 2, 10, 11, 13-15, 18, 20, 21, 23, 24, 32, 33, and 35 as obvious (35 U.S.C. §103) over Crouse (U.S. Patent No. 5,764,972) in view of Hug (U.S. Patent No. 5,806,078) and Gonos (U.S. Patent No. 6,901,418). Applicants traverse with respect to the amended claims.

Claims 1, 14, 20, and 23 recite processing a request to write to a source file in a storage system; determining whether a retention rule is provided for the source file in response to the write request; in response to determining that one retention rule is provided for the source file, generating a versioned file name, wherein a versioned file comprises the source file at a point-in-time; transmitting a command to a file system to copy the source file data to a versioned file having the generated versioned file name; adding the generated versioned file name to a retention index file; and processing the retention index file to determine whether to purge versioned files.

The Examiner stated that with respect to the arguments with respect to Crouse and Gonos that one cannot show non-obviousness by attacking references individually. (Final Office Action, pgs. 18 and 20) Applicants object to this characterization because Applicants attack the obviousness finding by explaining why the sections the Examiner cited from the references do not teach the claim requirements for which they are cited. Applicants submit that the only way one can refute the rejection is by showing that the references do not teach the requirements for which they are cited.

In the Response to Arguments, the Examiner found that "Gonos provides a method wherein '[a] process is initiated when a determination is made that a particular dataset is going to be archived'". (Final Office Action, pg. 18) However, the Examiner did not cite which reference mentions this teaching. Moreover, initiating a process when a determination is made to archive a data set does not teach or suggest the claim requirement of determining whether a retention rule is provided for a source file in response to a write request to the source file. The Examiner found that making a determination to archive a particular dataset involves determining a retention rule in response to a write request. (Final Office Action, pg. 18) Applicants traverse this unsupported conclusion and note that the Examiner has not cited any art that teaches, suggests or mentions the specific claim requirement of determining whether a retention rule is provided for a source file in response to a write request to such source file.

In the response, the Examiner directed applicants to col. 21, lines 43-46 of Crouse (Although the action says Gonos, Gonos does not have 21 columns, but Crouse does). (Final Office Action, pg. 19) The cited col. 21 mentions that the AR (archiving) module 184 uses archival file attributes specified for a remote file. If the selection criteria are met by the file attributes and file access information, then that remote file is eligible for archiving. Nowhere does this cited col. 21 anywhere teach or suggest that the AR module 184 processes a retention rule or archival attributes in response to a write request to a source file. Instead, the cited col. 21 discusses how the archival module uses archival file attributes.

Moreover, Applicants submit that Crouse teaches away from processing a retention rule for a file or archival attributes in response to a write request because Crouse discusses archival "[w]hen online disk space usage exceeds the high threshold….. The remote files 42 that are eligible for removal or archiving and have waited longest since last access will be eliminated or archived first. (Crouse, col. 21, lines 24-31). Thus, the cited Crouse discusses archiving for space management, not in response to a write request as claimed.

In the Response, the Examiner further noted that Crouse "discloses the selection of 'remote files that are eligible for elimination or archiving in accordance with their hierarchically selectable archival file attributes'". (Final Office Action, pg. 19) Applicants submit that eligibility of files for archival based on archival file attributes does not teach or suggest the claim requirement that a retention rule for a file is processed in response to a write request for the file. Instead, the cited Crouse is discussing the processing of archival rules for space management purposes.

The Examiner cited col. 20, lines 40-64 and col. 21, lines 43-46 of Crouse with respect to the requirement of determining whether a retention rule is provided for the source file in response to the write request. (Final Office Action, pgs. 4, 9) Applicants traverse.

The cited col. 20 mentions that the RM (removable media) module 182 provides direct access to remote files on a removable media. In response to a read request to a remote file on the removable media, the RM module examines the direct access parameter of the file migration attributes to determine if direct access is allowed. If direct access is allowed, then the RM module issues an open command. Once the indicated removable media is opened having been mounted, the RM module 182 uses the removable media resource file to manage direct access.

Nowhere does the cited col. 20 anywhere teach or suggest the claim requirement of determining whether a retention rule is provided for the source file in response to the write request. Instead, the cited col. 20 discusses examining an access parameter of file migration attributes in response to a read request, not a write as claimed. Moreover, the cited col. 20 concerns reviewing a direct access parameter to determine if direct access is allowed. This does not teach or suggest the claim requirement of determining a retention rule concerning the handling of versioned files. Instead, the cited col. 20 concerns an access parameter in response to a read request to determine if access is allowed, not a retention rule as claimed.

The Examiner cited col. 21 of Crouse, which mentions that the AR (archiving) module 184 uses archival file attributes specified for a remote file. If the selection criteria are met by the file attributes and file access information, then that remote file is eligible for archiving. Nowhere does this cited col. 21 anywhere teach or suggest that the AR module 184 processes a retention rule or archival attributes in response to a write request to a source file. Instead, the cited col. 21 discusses how the archival module uses archival file attributes.

The Examiner cited col. 6, lines 28-41 of Hug as teaching the claim requirement of in response to determining that one retention rule is provided for the source file, generating a versioned file name, wherein a versioned file comprises the source file at a point-in-time. (Final Office Action, pgs. 4, 9) Applicants traverse.

The cited col. 6 of Hug discusses how a version data file and difference file is generated when a new document is saved. When each subsequent version is checked in, the version manager processor updates and stores the version data file and the difference data file to reflect the changes in the subsequent version. Nowhere does the cited Hug teach or suggest the combination of claim requirements of generating a versioned file in response to determining that one retention rule is provide for a source file in response to a write request. The cited Hug discusses generating a version data file when a new document is saved, but nowhere teaches or suggests that a versioned file name or file is generated when a retention rule is determined for a source file in response to a write request to that source file.

In the Response, the Examiner further cited col. 21, lines 24-32 of Crouse with respect to the claim requirement of "processing the retention index file to determine whether to purge versioned files". (Final Office Action, pgs. 4, 19) Applicants traverse.

The cited col. 21 mentions that when disk space usage exceeds a high threshold, the archival (AR) module begins to purge or archive remote files eligible for elimination. The archival files that have waited longest since last access will be eliminated or archived first. Applicants submit that this cited col. 21 of Crouse does not teach or suggest processing a retention index file to determine whether to purge files, such that a generated versioned file name is added to the retention index file. Instead, the cited Crouse discuses purging remote files when disk space exceeds a threshold, but does not teach or mention processing a retention index file as claimed.

Applicants submit that independent claims 1, 14, 20 and 23 are patentable over the cited combination of references because the cited sections of Crouse, Hug and Gonos, alone or in combination, do not each the claim requirements for which they were cited.

Claims 2, 10, 11, 13, 15, 18, 21, 24, 32, 33, and 35 are patentable over the cited art because they depend from one of claims 1, 14, 20 and 23, which are patentable over the cited art for the reasons discussed above. Moreover, the following dependent claims provide additional grounds of patentability over the cited art for the following reasons.

Claims 2, 15, 21, and 24 depend from claims 1, 14, 20, and 23 and further require that purging the versioned files comprises: determining versioned files to purge according to the retention rule; deleting the determined versioned file names from the retention index file; and transmitting a command to the file system to delete versioned files having the determined versioned file names.

In the Response to Arguments, the Examiner cited col. 7, lines 43-50 of Gonos as teaching the requirements of these claims. (Final Office Action, pgs. 21-22) The cited col. 7 mentions that the processor deletes rows from storage that meet the decision logic, where the decision logic may be to delete a row after a predetermined number of days since the row was moved to separate storage or after the archiving has been performed a predetermined number of times since the row was moved.

Nowhere does the above cited col. 7 anywhere teach or suggest deleting determined versioned file names of versioned files to purge from a retention file index. Instead, the cited col. 7 mentions how rows may be deleted from storage after a predetermined number of days, etc. The Examiner found that the above cited col. 7 teaches deleting rows from the "archival index". Although col. 6, lines 55-60 of Gonos mentions an "archival index file" storing information about more than one archive file, the cited col. 7 does not teach or suggest operations to remove information on archived files from the cited "archival index file". Instead, the cited col. 7 discusses deleting rows from storage after some determined predetermined number of days or time since the row was moved.

The Examiner further cited col. 7, lines 60-67 of Gonos as teaching the claim requirement of deleting the determined versioned file names from the retention index file. (Final Office Action, pg. 5) Applicants traverse.

The cited col. 7 mentions that when the processing of each database table is complete, the processor may delete unnecessary archive information and the processor may delete the archive file, the archive file index, and the archive index identification file after a period of time has passed since those files were created or used. As mentioned above, the archive file index and index identification file include information on archived database records.

Nowhere does the cited col. 7 anywhere teach or suggest deleting determined versioned file names of versioned files to purge from a retention file index. Instead, the cited col. 7 mentions deleting the archive index file, not deleting a versioned file name from a retention index file as claimed.

Accordingly, claims 2, 15, 21, and 24 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not taught or suggested in the cited art.

2. Claims 3, 4, 16, 22, 25, and 26 are Patentable Over the Cited Art

The Examiner rejected claims 3, 4, 16, 22, 25, and 26 as obvious (35 U.S.C. §103(a)) over Crouse, Hug, Gonos, and Howard (U.S. Patent No. 6,098,079). (Office Action, pg. 13) Applicants traverse.

First off, these claims are patentable over the cited art because they depend from one of independent claims 1, 14, 20, and 23, which are patentable over the cited art for the reasons discussed above. Moreover, the following dependent claims provide additional grounds of patentability over the cited art.

Claims 3, 16, 22, and 25 depend from claims 1, 14, 20, and 23 and further recite applying a function to the source file name to determine the retention index file, wherein the determined retention index file maintains names of versioned files for the source file to which the function is applied, and wherein the generated versioned file name is added to the determined retention index.

In the Response to Arguments, the Examiner cited col. 3, lines 31-38 and 56-59 of Gonos as teaching the requirements of these claims. (Final Office Action, pg. 22) Applicants traverse.

The cited col. 3 of Gonos mentions that online data may be stored in an object data system, where each object is associated with attributes and attribute values. Online data may be stored in one or more data files without using a relational or object database system. Further, to restore data value CA to the online database structure, the data value CA is inserted into the column identified by an attribute tag in the online database structure.

Nowhere does this cited col. 3 of Gonos anywhere teach or suggest the claim requirement of applying a function to the source file name to determine the retention index file. Instead, the cited col. 3 mentions that data may be stored in files and that data values may be restored.

The Examiner further cited col. 3, lines 55-58 of Howard as teaching the requirement of determining the retention index file. (Final Office Action, pg. 22) Applicants traverse.

The cited col. 3 of Howard mentions tracking the involvement of sites in file reconciliation, where each version entry in each journal file contains a site indicator indicating which of the journal files for other sites has a copy entry. Nowhere does this cited col. 3 of Howard teach or suggest the claim requirement of applying a function to the source file name to determine the retention index file having names of versioned files for the source file to which the function is applied. Instead, the cited col. 3 of Howard mentions tracking the involvement of sites in file reconciliations, where a journal file has a version entry.

The Examiner cited col. 6, lines 45-46 of Gonos as teaching the claim requirement of applying a function to the source file name to determine the retention index file. (Final Office Action, pg. 10) Applicants traverse.

The cited col. 6 mentions that an archive index file and an archive index identification file are associated with each archive file. As discussed, the archive file has archived database rows. Nowhere does this cited col. 6 anywhere teach or suggest applying a function to the source file name to determine the retention index file. Instead, the cited col. 6 discusses archive files associated with an archive file having archived database rows, where the archive index files have information on the archived rows.

The Examiner cited col. 2, lines 48-52 of Howard as disclosing the claim requirements that the determined retention index file maintains names of versioned files for the source file to which the function is applied and that the generated versioned file name is added to the determined retention index. (Final Office Action, pg. 10) Applicants traverse.

The cited col. 2 mentions that a reconciliation technique uses a set of journal files in which the history of file creation, modification, and deletion throughout the system is recorded, each journal file maintaining the portion of the history involving a particular site, or storage location.

Although the cited col. 2 of Howard discusses journal files having information on file history creation, deletion and modification, nowhere does the cited col. 2 disclose that a function is applied to the source file name to determine a particular retention file index having names of versioned files for the source file to which the function is applied. Instead, the cited col. 2 discuses journal files having file history information, but nowhere suggests that a journal file having information on versioned files for a source file is determined by applying a function to the source file name.

Accordingly, claims 3, 16, 22, and 25 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not taught or suggested in the cited art.

3. Claims 5-9, 17, and 27-31 are Patentable Over the Cited Art

The Examiner rejected claims 5-9, 17, and 27-31 as obvious (35 U.S.C. §103(a)) over Crouse, Hug, Gonos, and Kaler (U.S. Patent No. 6,928,447). (Office Action, pg. 15) Applicants traverse.

First off, these claims are patentable over the cited art because they depend from one of independent claims 1, 14, 20, and 23, which are patentable over the cited art for the reasons discussed above. Moreover, the following dependent claims provide additional grounds of patentability over the cited art.

Claims 9 and 31 depend from claims 1 and 23 and further recite that the retention rule specifies multiple time periods and one maximum number for each time period to separately maintain versioned files for the source file for different time periods, wherein the determining whether the number of versioned files to maintain for the source file exceeds the specified maximum number is performed for each specified time period, and wherein selecting the number of oldest versioned file names to purge to reduce the number of versioned file names in the retention index file is performed for each specified time period to reach the maximum number specified for the time period.

The Examiner cited col. 15, lines 1-16 of Crouse as teaching the additional requirements of these claims. (Final Office Action, pgs. 15-16, 19) Applicants traverse.

The cited col. 15 mentions that when a new version of a file is created the user may specify a cycle limit and cycle life span. The cycle limit specifies the maximum number of cycles that can exist for the file. The cycle life span specifies the span or time to live criteria for the cycles of the file. Once the life span has been exceeded, the cycle is eligible for termination.

Although the cited col. 15 provides cycle limits and life spans, nowhere does the cited col. 15 anywhere teach or suggest multiple time periods and maximum numbers, i.e., multiple cycle limits and life spans, for one source file. Instead, the cited col. 15 only discusses one life span and limit number for one file.

In the Response to Arguments, the Examiner found that it would have been obvious "to discern that where the reference discloses 'number of cycles' and the correlative 'their life span' in the plural, that multiple time periods and maximum numbers for one source file would indeed be possible. (Final Office Action, pg. 20) Applicants traverse.

According to the Manual of Patent Examination of Procedure (MPEP):

> [t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

(MPEP Sec. 2143.01, pg. 128, Rev. 5, Aug. 2006)

Here, the mere fact one can form a system providing multiple time periods and maximum numbers, i.e., multiple cycle limits and life spans, for one source file, does not teach this modification or requirement unless there is some teaching in the art of providing multiple time periods and a maximum number of versioned files to maintain for a source file for each time period. Teaching a cycle limit for a file does not teach or suggest multiple maximum numbers, i.e., cycle limits, of versioned files to maintain for multiple time periods.

Accordingly, claims 9 and 31 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not taught or suggested in the cited art.

4. Claims 12, 19, and 34 are Patentable Over the Cited Art

The Examiner rejected claims 12, 19, and 34 as obvious (35 U.S.C. §103(a)) over Crouse, Hug, Gonos, and Official Notice. (Office Action, pg. 20) Applicants traverse.

These claims are patentable over the cited art because they depend from one of independent claims 1, 14, and 23, which are patentable over the cited art for the reasons discussed above. Moreover, the following dependent claims provide additional grounds of patentability over the cited art.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-35 are patentable over the art of record. Applicants submit that no additional fee is needed to enter this response. Nonetheless, should any additional fees be required, please charge Deposit Account No. 09-0466.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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